

**COMMONWEALTH OF VIRGINIA**  
**Department of Environmental Quality**  
**South Central Regional Office**

**STATEMENT OF LEGAL AND FACTUAL BASIS**

Yorktowne Cabinetry, Inc.  
Pittsylvania County, Virginia  
Permit No. (SCRO- 32035)

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Yorktowne Cabinetry, Inc. has applied for a Title V Operating Permit for its Pittsylvania County facility. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

Engineer/Permit Contact: \_\_\_\_\_ Date: \_\_\_\_\_ DRAFT  
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Air Permit Manager: \_\_\_\_\_ Date: \_\_\_\_\_  
David J. Brown

Regional Director: \_\_\_\_\_ Date: \_\_\_\_\_  
T. L. Henderson

## **FACILITY INFORMATION**

Yorktowne Cabinetry  
100 Industrial Park Road  
Mifflinburg, PA 17844

Facility  
Yorktowne Cabinetry, Inc.  
2000 Cane Creek Parkway  
Ringgold, VA 24586

County-Plant Identification Number: 51-143-00156

## **SOURCE DESCRIPTION**

NAICS Code: 337110 – Wood cabinet manufacturing

Yorktowne Cabinetry is a wood furniture manufacturing facility which produces semi-custom cabinets. Yorktowne receives particle board, plywood, and dimensionally cut lumber which has been pre-dried. There is no lumber drying kiln at the facility. Woodworking equipment at the plant consists of numerous saws, planers, routers, sanders, etc.

The finishing equipment consists of 19 spray booths, each equipped with a dry overspray filter for control of particulate emissions. The spray booths are configured as 3 lines of 6 booths each, plus one specialty line booth. Each finishing line is equipped with curing ovens; some are gas-fired and others are electric infrared dryers. Heat input capacity for the largest curing oven is approximately 6 MMBtu/hr. Finishing materials are stored in containers of 55 gallons or less.

The facility is a Title V major source of VOC and HAP. This source is located in an attainment area for all pollutants, and is a PSD minor source due to a federally enforceable limit on VOC emissions.

The facility was previously permitted under a State Major NSR Permit issued on May 23, 2005, and amended on August 30, 2005.

## **COMPLIANCE STATUS**

The facility was issued a Warning Letter on August 31, 2006 for failing to submit an initial compliance report for MACT Subpart JJ. Other than that resolved issue, the facility has not been found to be in violation of any state or federal applicable requirements.

## **EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION**

The emissions units at this facility are described in Table I, below:

Table I  
Significant Emission Units

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
<b>Woodworking Equipment</b> Subject to 9 VAC 5 Chapter 50 (New or Modified)							
AH1, AH2	BH1-1, BH 2-1	Woodworking Equipment	System Air Handling Capacity 71,180 cfm	Fabric filters – MAC 144MCF494 or equivalent	BH1,2	PM/PM10	8/30/05
AH3	BH 3-1	Woodworking Equipment	System Air Handling Capacity 52,020 cfm	Fabric filter – MAC 144MCF361 or equivalent	BH3	PM/PM10	8/30/05
<b>Furniture Finishing Equipment</b> Subject to 9 VAC 5 Chapter 50 (New or Modified)							
H1 M1 M2 S1	H1.1-H1.9 M1.1-M1.8 M2.1-M2.8 S1.1-S1.2	19 Spray Booths		Dry Overspray Filters	----	PM/PM10	8/30/05
RC1	Na	1 Roll Coating Line		na	----	na	8/30/05

\*The Size/Rated capacity is provided for informational purposes only, and is not an applicable requirement.



## EMISSIONS INVENTORY

VOC emissions are calculated assuming all VOC throughput is emitted. PM10 emissions are calculated based on allowable grain loading for each hour of exhaust to outside air. Attached emission calculations for Calendar Year 2006 were submitted by the permittee and reviewed by DEQ. Emissions are summarized in the following tables.

2006 Actual Emissions

	2006 Criteria Pollutant Emission in Tons/Year	
Emission Unit	VOC	PM <sub>10</sub>
AH 1-3	0	2.58
H1, M1, M2, & S1	68.8	1.27
Total	68.8	3.85

2006 Facility Hazardous Air Pollutant Emissions

Pollutant	2006 Hazardous Air Pollutant Emission in Tons/Yr
Toluene	0.86
Ethyl Benzene	1.21
Methanol	1.55
Formaldehyde	0.06
Xylene	4.86
Cumene	0.10
Chromium III Compounds	0.14

## EMISSION UNIT APPLICABLE REQUIREMENTS - WOODWORKING

### Limitations

Construction of the facility was authorized by a new source review permit issued on August 30, 2005. That permit contained the following limitations which have been incorporated into the Title V permit:

1. (NSR Condition 3) Particulate emissions from the woodworking equipment will be controlled by fabric filters.
2. (NSR Conditions 8 and 9) Particulate emission limits include an **exit grain loading limitation** of 0.004 gr/dscf on the exhaust from each baghouse (BH1, BH2, BH3). Yorktowne proposed this limit combined with a **limit on hours of exhaust to atmosphere**. This combination of restrictions is more stringent than BACT, but was requested for the purpose of limiting PM-10 emissions to less than the agency threshold for minor NSR dispersion modeling (and thereby expediting permit processing). The permit also places **annual emission limits** on particulate from each fabric filter controlling woodworking equipment. In order to meet their annual emission limits from the fabric filters, Yorktowne can vent each filter to atmosphere for either 3410 hours per year (each 71,180 cfm filter) or 3252 hours per year (50,020 cfm filter). This is expected to be adequate because Yorktowne only expects to operate their plant for 2 shifts (4000 hours per year) and because Yorktowne intends to recirculate exhaust air back into the building during winter months to conserve heat. However, should Yorktowne in the future desire to increase the number of hours they are allowed to vent the filters to outside air, they may do so by:
  - demonstrating through stack testing that PM-10 emissions are less than the 0.004 gr/dscf emissions limit; then requesting a permit amendment to adjust the permit limits on exit grain loading and allowable number of hours of external exhaust to remain within the annual emission limit for each fabric filter,
  - demonstrating through a dispersion modeling analysis that higher annual emissions will not cause or contribute to a violation of the NAAQS, and requesting an increase in the PM-10 emission limit (up to the level allowable as BACT), or
  - a combination of the above alternatives.
3. (NSR Condition 12) An opacity limit of 5% applies to visible emissions from each fabric filter.

In addition to limitations carried forward from the new source permit, a regulatory requirement (9 VAC 5-50-90) regarding control of fugitive emissions was incorporated into the Title V permit.

### Monitoring and Recordkeeping

1. (NSR Condition 14) The permittee will monitor and record monthly and annual hours of operation during which each fabric filter (BH1, BH2, BH3) is vented to outside air.
2. (NSR Condition 14) The permittee shall keep records of the volumetric flow rating for fans associated with each fabric filter (BH1, BH2, BH3).
3. In addition to monitoring and recordkeeping requirements carried forward from the new source review permit, performance of the fabric filters will be monitored in accordance with the CAM plan incorporated into the Title V permit. Visible emissions monitoring was

selected as a performance indicator because the absence of visible emissions is indicative of operation of a fabric filter in a manner necessary to comply with the emission standard. When the fabric filters are operating properly, no visible emissions are expected from the exhaust. Any observation of visible emissions indicates reduced performance of the particulate control device and triggers corrective action.

## Testing

Initial performance stack testing (NSR Conditions 16 and 17) was waived based on submittal of surrogate testing for a similar baghouse operating under comparable conditions. The surrogate test indicates that the exit grain loading will likely be met if the fabric filters are maintained in good condition.

Generally, absence of visible emissions would be considered sufficient monitoring for the quantity of particulate emissions expected from Yorktowne (annual permit limits are 4.16 tons per year for BH1 and BH2, and 2.90 tons per year for BH3). However, because Yorktowne accepted an emission limit of 0.004 gr/dscf in order to avoid state requirements for dispersion modeling, their predicted emission rate does not allow a large safety margin below their allowable limit. For that reason the Title V permit requires periodic testing of one fabric filter once every permit term (with each filter tested once before any are re-tested). Because the annual limits (which reflect the threshold for avoiding modeling) are not threatened if Yorktowne reduces the number of hours of venting to outside air, testing is waived for any permit term during which no filter is vented to outside air more than 2000 hours during every consecutive 12 month period.

## Reporting

In addition to the reporting requirements of the Title V General Conditions, additional reporting may be required if changes are made to the CAM plan.

## EMISSION UNIT APPLICABLE REQUIREMENTS – FURNITURE FINISHING OPERATION

### Limitations

Construction of the facility was authorized by a new source review permit issued on August 30, 2005. That permit contained the following limitations which have been incorporated into the Title V permit:

1. (NSR Condition 13) The new source permit incorporated MACT Subpart JJ by reference. Although specific applicable requirements are included in the Title V permit, Subpart JJ is also included by reference in the event any applicable requirements change or were inadvertently omitted.

It is noted that the Title V furniture plant boilerplate language for Conditions V.F.12. and V.I.2. was modified. These conditions summarize Formulation Assessment Plan requirements that are triggered by usage above the baseline level, as established in Tables 5 and 6. Since the plant was constructed after the period in which facilities could establish their own baseline levels, references to “increases” do not apply. To eliminate confusion references to increases were deleted. Any usage over that in Tables 5 and 6

triggers Formulation Assessment Plan requirements.

2. (NSR Condition 4) Particulate emissions from the spray booths shall be controlled by dry overspray filters.
3. (NSR Condition 7) VOC consumption is limited to 20.4 tons per month for the first 11 months of operation, and limits annual VOC consumption to 245.0 tons per year thereafter. This federally enforceable limit establishes Yorktowne as a PSD minor facility.
4. (NSR Condition 10) VOC emissions from the finishing system are limited to 245.0 tons per year, with clarification that the limit applies all VOC-containing materials used, including any storage or surge tanks. It is noted that there are currently no storage tanks or surge tanks on site or proposed. However, it is possible that in the future Yorktowne could elect to install a tank that would be exempt from new source review. This condition would clarify that emissions for tanks are included in the annual VOC emission limit.
5. (NSR Condition 10) Particulate emissions from the finishing system are limited to 2.66 lb/hr and 3.67 tons per year.
6. (NSR Condition 11) Visible emissions from each spray booth exhaust are limited to 5% opacity.

### **Monitoring and Recordkeeping**

(NSR Condition 14) Monitoring and recordkeeping requirements incorporated into the Title V permit include:

- certified product data sheets (CPDS), material safety data sheets (MSDS), or other vendor information showing VOC content, HAP and VHAP content, water content, and solids content for each coating, thinner, cleaning solvent, or other VOC-containing material used.
- monthly and annual throughput of each VOC-containing material used.
- monthly and annual emission calculations for VOC consumption and emissions sufficient to demonstrate compliance with emission limits.

### **Testing**

The permit does not require source tests for the furniture finishing operation. The Department and EPA has authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

### **Reporting**

In addition to the reporting requirements of the Title V General Conditions, additional reporting may be required in accordance with Subpart JJ (Condition V.F.12, Formulation Assessment Plans).

### **FACILITY WIDE APPLICABLE REQUIREMENTS**



Other than general conditions, there are no facility wide applicable requirements.

## **STREAMLINED REQUIREMENTS**

The new source permit (Conditions 16 and 17) required initial performance testing for the fabric filters associated with woodworking operations. Both conditions contained provisions for a waiver from testing if the permittee submitted an acceptable alternate demonstration of compliance with particulate emission limits. This demonstration was submitted and found acceptable by DEQ; therefore, Conditions 16 and 17 of the new source permit dated August 30, 2005, have been streamlined from the Title V permit.

Condition 5 of the NSR permit required that VOC emissions from the finishing process be controlled by work practice standards sufficient to meet the requirements of 40 CFR 63, Subpart JJ. Since those requirements are specifically incorporated into the Title V permit, Condition 5 of the NSR permit was streamlined from the permit.

Initial notification requirements and permit invalidation/suspension/revocation limitations related to the new source construction permit contained in Conditions 18, 19, and 23 of the new source permit have also been streamlined from the Title V permit.

## **GENERAL CONDITIONS**

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110 that apply to all Federal-operating permitted sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions.

### **Comments on General Conditions**

#### **B. Permit Expiration**

This condition refers to the Board taking action on a permit application. The Board is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by §2.1-20.01:2 and §10.1-1185 of the *Code of Virginia*, and the "Department of Environmental Quality Agency Policy Statement No. 3-2006".

#### **F. Failure/Malfunction Reporting**

Section 9 VAC 5-20-180 requires malfunction and excess emission reporting within four hours of discovery. Section 9 VAC 5-80-250 of the Title V regulations also requires malfunction reporting; however, reporting is required within two days. Section 9 VAC 5-20-180 is from the general regulations. All affected facilities are subject to section 9 VAC 5-20-180 including Title V facilities. Section 9 VAC 5-80-250 is from the Title V regulations. Title V facilities are subject to both sections. A facility may make a single report that meets the requirements of 9 VAC 5-20-180 and 9 VAC 5-80-250. The report must be made within four daytime business hours of discovery of the malfunction.

## **J. Permit Modification**

This general condition cites the sections that follow:

9 VAC 5-80-50. Applicability, Federal Operating Permit For Stationary Sources

9 VAC 5-80-190. Changes to Permits.

9 VAC 5-80-260. Enforcement.

9 VAC 5-80-1100. Applicability, Permits For New and Modified Stationary Sources

9 VAC 5-80-1790. Applicability, Permits For Major Stationary Sources and Modifications Located in Prevention of Significant Deterioration Areas

## **U. Malfunction as an Affirmative Defense**

The regulations contain two reporting requirements for malfunctions that coincide. The reporting requirements are listed in sections 9 VAC 5-80-250 and 9 VAC 5-20-180. The malfunction requirements are listed in General Condition U and General Condition F. For further explanation see the comments on general condition F.

## **Y. Asbestos Requirements**

The Virginia Department of Labor and Industry under Section 40.1-51.20 of the Code of Virginia also holds authority to enforce 40 CFR 61 Subpart M, National Emission Standards for Asbestos.

## **STATE ONLY APPLICABLE REQUIREMENTS**

There are no state only applicable requirements.

## **FUTURE APPLICABLE REQUIREMENTS**

There are no identified future applicable requirements

## **INAPPLICABLE REQUIREMENTS**

The MACT standard for halogenated solvent cleaning in 40 CFR 63 Subpart T, and 9 VAC 5 Chapter 50, are not currently applicable. Yorktowne does not use any halogenated solvents in their parts washer.

## **INSIGNIFICANT EMISSION UNITS**

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Insignificant emission units include the following:

Emission Unit No.	Emission Unit Description	Citation <sup>1</sup> (9 VAC_)	Pollutant Emitted (5-80-720 B.)	Rated Capacity ( 5-80-720 C.)
SH 1	N.G. Fired space heaters	9 VAC 5-80-720 C		Total combined < 2.0 MMBtu/hr
MU 1-5	N.G. Fired make up air units	9 VAC 5-80-720 C		6.2 MMBtu/hr each

<sup>1</sup>The citation criteria for insignificant activities are as follows:

9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application

9 VAC 5-80-720 B - Insignificant due to emission levels

9 VAC 5-80-720 C - Insignificant due to size or production rate

## CONFIDENTIAL INFORMATION

The permittee did not submit a request for confidentiality. All portions of the Title V application are suitable for public review.

## PUBLIC PARTICIPATION

The proposed permit will be place on public notice in the *Danville Register* from July 12, 2007 to August 13, 2007 .